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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/423,085	11/02/1999	TAKAYUKI MITSUYA	1422-401P	6326

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EXAMINER

MADSEN, ROBERT A

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 10/02/2003

26

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/423,085

Applicant(s)

MITSUYA ET AL.

Examiner

Robert Madsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14 and 16-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 14 and 16-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 14, 2003 has been entered. Accordingly, claims 13 and 15 have been cancelled, and claims 24-27 have been added. Claims 14,16-27 remain pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 27, 16,17, and 19 are rejected under 35 U.S.C. 102(b) as anticipated by Mitsuya et al. (JP409009878 A) as evidenced by Vogel et al.

4. Claims 27,16,17, and 19 are product-by-process claims. Mitsuya et al. teach a spray dried delipidated egg yolk powder (as evidenced by Vogel et al. spray drying yields porous particles on Page 743) as a carrier for a functional food material as implied by claim 27, wherein the functional food material is oil, which is susceptible to deterioration by light, heat, and oxygen as recited in claim 16, the food material is added

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to a food composition, such as a confectionery , as recited in claim 19, and the lipid content of the delipidated egg yolk powder is 10% or less as recited in claim 17.

(English Translation of JP409009878: Abstract, Paragraphs 0005-0007).

5. “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuya et al. (JP409009878 A) as evidenced by Vogel et al. as applied to claims 27,16,17,19 above, further in view of Ueda et al. (US 5487911).

8. Regarding claim 14, Mitsuya et al. teach spray-dried delipidated egg yolk particles impregnated with oil, but are silent in teaching any particular particle size. Ueda et al. teach spray dried egg yolk particles are desirably between 5 and 200 microns, wherein anything larger would have an undesirable mouthfeel (Column 2, lines

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54 to 67, Column 3, line 65 to column 4, line 5). Therefore, it would have been obvious to modify the mixture of Mitsuya et al. to have a particle size of between 1 micron and 100 microns since Ueda et al. teach spray dried full fat yolk particles within that size range have a more desirable mouth feel and since Mitsuya et al. add the impregnated spheres to a food composition, mouth feel would be an important consideration.

9. Claims 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuya et al. (JP409009878 A) as evidenced by Vogel et al. as applied to claims 27,16,17,19 above, further in view of Perry et al. and Tarara et al. (US 6565885 B1).

10. Although Mitsuya et al. teach pores, Mitsuya et al. are silent in teaching the pore size of 0.1 to 10 microns. Perry et al. teach pores are formed in spray dried particles with the rate of vaporization is sufficient to force a hole through the particle wall. (Paragraph 3 Page 12-85). Perry et al. also teach that the physical characteristics are affected by spray conditions such as the temperature of both the inlet product being spray dried and the gas used for spray drying, the direction of the gas flow, and the material that is being spray dried (Paragraph 4 Page 12-85). Tarara et al. also teach spray drying, and are relied on as further evidence that spray drying conditions, in addition to the type of material being sprayed, affect the physical characteristic of spray dried particles, and more specifically the number of pores and the size of the pores formed in a particle (Column 17, lines 30-57 and Column 44, lines 39-58). Therefore, to obtain any particular pore size would have been an obvious result effective variable of

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the spray conditions selected since it was well known in the art that pores size is affected by spray condition.

11. Claims 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsuya et al. (JP409009878 A) in view of Vogel et al., Ueda et al. (US 5487911), Perry et al., Likuski et al. (US 4971820), Meusel (US 2786766), Maloney et al. (US 3505076), Yano et al. (US 4234619), and Melnick (US 3563765).

12. Regarding claims 20,21,24,and 26 Mitsuya et al. teach a mixing a delipidated egg yolk with 5 or more times greater amount of water (i.e. within the 100 parts egg yolk to 10-1000 parts water), spray-drying the mixture, and stirring the spray-dried particles with a functional food material, such as oil which is susceptible to deterioration, to form a composition (See English Translation of JP409009878: Abstract, Paragraphs 0005 to 0007). Mitsuya et al. are silent in spray drying at 50-200°C and drying the mixture comprising the spray-dried egg particles and functional food material under reduced pressure to 10% moisture as recited in claim 20, while stirring as recited in claim 21, and at 100 mmHg or less as recited in claim 26. Mitsuya et al. are also silent in teaching the moisture level is 10% after spray drying as recited in claim 24.

13. Vogel et al. are relied on as evidence that spray drying of particles with water produces porous spheres (Page 743, Paragraphs 2 and 3).

14. With respect to the spray drying at a particular temperature, Ueda et al. teach spray drying egg yolk particles at 130-200°C (Column 3, line 65 to Column 4, line 5). Perry et al. teach the temperature selected for spray drying affects the physical

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properties of the spheres such as particle size and bulk density (Page 12-85, Paragraph 4). Therefore, it would have been obvious to select a temperature between 50°C and 200°C since Ueda et al. teach spray drying full fat yolk at 130-200°C and one would expect the delipidated yolk to be similar. Furthermore, once 130-200°C was known to for spray drying egg yolks, selecting any temperature around these values would have been an obvious result effective variable of the desired particle size and density since Perry et al. teach the temperature selected for spray drying will effect these product characteristics.

15. With respect to drying the mixture of egg particles with function food under vacuum, Likuski et al. teach, like Mitsuya et al., impregnating a porous protein substrate with an oil, without the substrate having an oily surface. Likuski et al. teach if the mixing step is done under vacuum, the absorption into the protein is enhanced and an oily surface is avoided. Likuski et al. teach a vacuum of 0-20kPa, which includes 100 mmHg or less, as recited in claim 26. Abstract, Column 1, lines 25-32, Column 2, lines 34-63, Column 3, lines 10-14, 38-58). Meusel is relied on as further evidence of the conventionality of blending a functional food subject to deterioration (such as a flavor oil) with a carrier that will prevent deterioration under vacuum conditions, 100 mmHg or less as recited in claim 26 (i.e. 30 inches Hg) to drive the functional food into the carrier. Meusel further teaches stirring and vacuum, as recited in claim 21, so that the functional food is uniformly driven into the voids of the carrier (Column 1, lines 15-40, Column 2, lines 21-4, Column 3, lines 1-22). Maloney et al. are also relied on as further evidence of the conventionality of mixing a porous protein (i.e. cereal protein) structure

with an oil, which is subject to deterioration, under vacuum will provide a greater amount of oil pick up (Column 3, line 60 to Column 5, line 5). Therefore, it would have been obvious to mix the delipidated egg yolk particles and functional food under vacuum, as recited in claim 20, while stirring as recited in claim 21 at 100 mmHg or less as recited in claim 26, since it was notoriously well known in the art that utilizing a vacuum at 100 mmHg or less will to mix a porous edible substrate with a functional food that is susceptible to deterioration will enhance the absorption of the functional food into the porous edible substrate and stirring will assist in a more uniform absorption. One would have been substituting one method of mixing a functional food susceptible to deterioration with an porous edible substrate for the same purpose: impregnating the porous edible substrate with the functional food.

16. With respect to the limitation that the mixture after mixing under vacuum has a moisture level of less than 10%, Yano et al. Also teach spray-dried delipidated egg yolk powder (See Abstract, Example 3 item G), and teach it is preferred that the spray drying step reduces the moisture to 15% lower and most preferably 5%, as recited in claim 24, (Column 4, lines 45-62). Melnick is relied on as further evidence of the conventionality of producing delipidated yolk solids comprising less than 10% moisture (Table 4), albeit not by spray drying. Therefore, it would have been obvious to reduce the moisture of the delipidated egg yolk particles of Mitsuya et al. to less than 10% moisture at the spray drying step since Yano et al. teach about 5% is a preferred range for spray dried delipidated egg yolks and it was well known, regardless of the method, to produce delipidated egg yolk solids with less than 10% moisture. It would have been further

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obvious that the mixing of the spray dried egg particles and oil would also have less than 10% moisture since it is preferred to obtain spray dried delipidated egg yolk particles of 5% moisture, and the particles are mixed with oil, not any additional moisture, at the vacuum-mixing step.

17. Regarding claims 22 and 23 Mitsuya et al. teach removing fat from the egg yolk using 100 parts yolk to 1000-2000 parts ethanol, as well as 5000 parts ethanol, and solvent extraction (Abstract, Paragraph 0008, Example 1).

18. Regarding claim 25, Mitsuya et al. teach 20%, 33% and 50% weight food per 80%, 67%, and 50% egg yolk (in Examples 2-4 and that the texture depends on the oil content (Paragraph 0007). To further select any other amount of functional food material from 5-60% would have been an obvious result effective variable of the desired level of functional food to be added to a food composition as well as the desired texture of the functional food/egg yolk particles.

Response to Arguments

19. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion


20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 7:00AM-3:30PM M-F.

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21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

22. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761



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